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STATE OF BRUNEI

ANNUAL REPORT

ON THE

MEDICAL DEPARTMENT

FOR THE YEAR

1932

BY

Dr. E. W. MARTINDELL, M.B., B.S. (London)

Medical Officer, Brunei



SINGAPORE :

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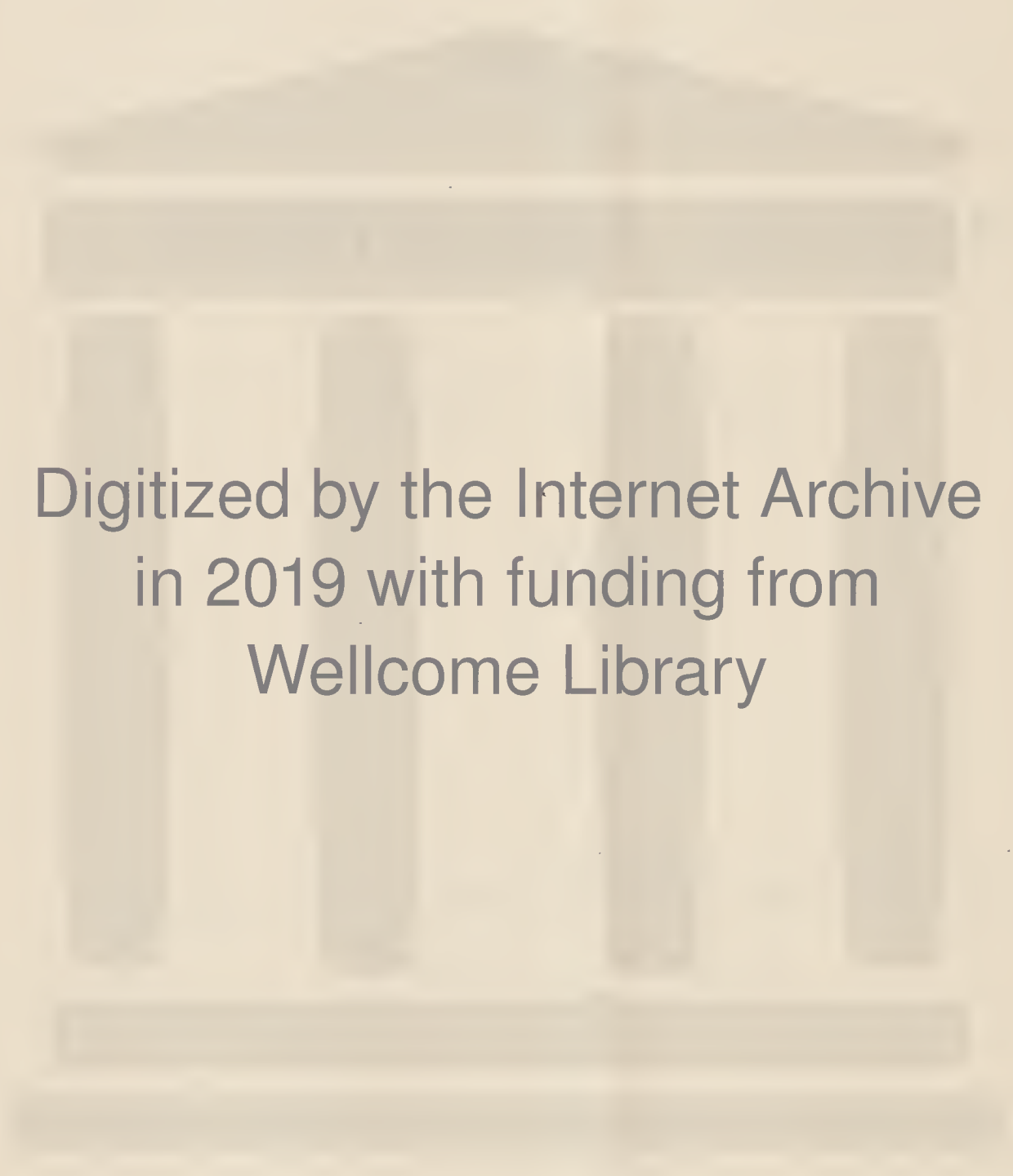
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ANNUAL REPORT ON THE MEDICAL DEPARTMENT, BRUNEI, FOR THE YEAR 1932

I.—ADMINISTRATION

(a) STAFF

1. The full establishment of the Department is given in Appendix I.

2. Dr. E. W. MARTINDELL acted as Medical Officer throughout the year. The Medical Officer is also the Health Officer.

In addition he is an Assistant Controller of Labour and a Magistrate class II of the State.

3. Dr. N. W. AHIN was appointed Assistant Medical Officer, Kuala Belait in December. The services of this Officer are shared by the British Malayan Petroleum Co., Ltd., and the Brunei Government.

4. *Appointments.*—The following new appointments were made during the year.

(1) ABDULLAH BIN HAJI DAUD, probationer dresser appointed on 24th June, 1932.

(2) JAHRAH BINTI SARUDIN, female attendant appointed on 11th August, 1932.

(3) ALIMAH BINTI SARUDIN, female attendant appointed on 11th August, 1932.

5. *Leave.*—MOHAMED YUSOFF BIN ABDUL RAJID, Dresser Grade I from 21st September, 1932, to 30th October, 1932.

6. MOHAMED HUSSAIN BIN TARAM, Dresser Grade III from 28th December, 1932, to 10th January, 1933.

(b) ORDINANCE AFFECTING PUBLIC HEALTH

7. A Labour Enactment was passed on 20th June, 1932.

It is modelled on the Federated Malay States code and calls for no special comment.

(c) FINANCIAL

8. The total Revenue collected during the year was \$913.13 compared with \$726.15 in 1931.

9. The total Expenditure was \$17,956.77 compared with \$18,434.07 in 1931. Details of this expenditure will be found in Appendix II.

10. The total Revenue of the State was \$362,402.86 and the total Expenditure \$334,328.27, so that the percentage of Medical expenditure is 5.4% (approximately) of the total.

II.—PUBLIC HEALTH

(a) GENERAL REMARKS

11. It may be said with certainty that Brunei is a healthy State. The two common causes of invalidism,—Malaria and Ankylostomiasis—are relatively uncommon in the large centres of population.

In addition, other grave diseases are rare.

12. There was no epidemic of any grave infectious disease. An epidemic of whooping cough occurred in Brunei in the months January to March, but no mortality has been attributable to this malady directly. In the same months a few cases of Chicken-pox occurred. In both attempts at isolation proved impossible.

13. Birth and Death registration is compulsory and the figures are reliable. The cause of death, however, is in over 90% of case certified by non-medical persons, in most instances by headmen. Therefore the figures of these are largely guess work and totally unreliable.

(b) INFECTIOUS AND COMMUNICABLE DISEASE

(a) *Mosquito-borne disease—*

14. A few cases of Elephantiasis of the leg were seen but in no case was the Filaria found. It is known that this disease exists in the Barakas district of Brunei but the percentage of infected persons with symptoms is small.

15. No case of Dengue fever was seen or reported during the year.

16. *Malaria*.—Fortunately this is not a serious problem in Brunei. It will be seen from Appendix IX that of 371 films examined for the parasite 26 alone were positive. This gives a parasite Index of 7%. Reference to Appendix IV which shows the results of spleen and other examinations in school boys shows a spleen rate of 5.4 for the whole State. In Brunei and Kuala Belait, the main centres of population, the spleen rates are respectively 2.65 and 2.6.

17. There is much more malaria than these figures indicate. But the highest incidence is amongst the Kedayans—a nomadic and rural people who sparsely populate a vast territory.

Regular quinine administration is the only means of dealing with the disease amongst these people.

18. Of the 26 positive films 13 showed *Plasmodium vivax*, 10 *Plasmodium malarie* and 3 *Plasmodium falciparum*.

19. One case of Black water fever was treated. This came from one of the outlying islands in the Brunei Bay.

(b) *Infectious diseases—*

20. *Chicken-pox*.—Fifty-six cases seen.

21. *Pertussis*.—One hundred and seventy-three cases reported.

22. *Pneumonia*.—Five cases admitted into Government Hospital and all were discharged.

23. *Pulmonary Tuberculosis*.—Five cases treated in the Hospital during the year.

That many more cases of this disease exist is certain, as a few cases were treated outside the Hospital and by the Travelling Dispensary.

24. *Yaws*.—Seven cases were treated in the Government Hospital and 98 outside, giving a total of 105 in the year.

Few cases of Tertiary yaws are seen, the majority of patients come for treatment in the primary or secondary stages.

(c) *Other Communicable diseases*—

25. *Leprosy*.—No fresh case occurred. There are at present two lepers. The new admission was an old case sent in from Kuala Belait for an exacerbation of an old complaint. Both are Chinese and up to date no case has been recorded in a native of the State.

26. *Venereal diseases*.—Gonorrhœa is the more prevalent of this type of disease. Four cases were treated during the year in the Hospital, or 2% of the total admissions and 19 in the out-patient Dispensary.

27. Only two cases of syphilis were seen, one was admitted into Hospital.

28. It is difficult to state whether this is a true Index of the incidence of these diseases in Brunei.

It is certainly unknown in the rural areas as no cases were treated by the Travelling Dispensary.

(d) *Helminthic Infections*—

29. Round worm and to a much lesser extent Hookworm are the only two parasites met with.

30. Of 1,038 stools examined 515 were positive for *Ascaris* or roughly 50% and 64 for *Ankylostoma* or roughly 6%.

31. In the examination of School boys the figures are respectively 58.7% and 8.5%.

32. The mean of these two figures *viz.* 54.35% for *Ascaris* and 7.25% for *Ankylostoma* may be taken as a true Index of the incidence of these helminthic infections amongst the local population.

(e) *Dysenteries*—

33. There were seven admissions for this complaint or 3.5% of the total number. In addition 31 were treated in the Out-patient Department. Of the total six were amoebic and 32 bacillary.

34. The bacillary dysentery is of a very mild type and probably a "Flexner" infection. In the absence of laboratory facilities accurate diagnosis is impossible.

(c) VITAL STATISTICS

35. The estimated population for the year is 30,590. This is based on the census of 1931 and is fairly accurate.

36. The following are numbers by nationalities:

| | | | | |
|-----------|----|----|----|--------|
| Malays | .. | .. | .. | 27,000 |
| Chinese | .. | .. | .. | 3,000 |
| Europeans | .. | .. | .. | 60 |
| Eurasians | .. | .. | .. | 10 |
| Indians | .. | .. | .. | 220 |
| Others | .. | .. | .. | 300 |

These figures are only approximate.

37. Table of birth and death registration are given in Appendix III.

38. The birth rate is 42.69 per 1,000 and the death rate is 28.54. Both these figures are a considerable improvement on those of 1931 and a slight improvement on those of 1930.

39. *Still births*.—These have not been compiled this year as it is certain that the statistics are not reliable.

40. The main causes of death are omitted this year. It is felt that as these notifications are grossly unreliable, statistics based on these would be valueless. A better idea of the prevalence of any disease will be gained from the statistics of the Government Hospital (Reference Appendix V).

(d) TABLE SHOWING THE SICK INVALIDING AND DEATH RATES
OF EUROPEAN, NON-EUROPEAN OFFICIALS AND
POLICE FORCE IN 1932

| | <i>European officials</i> | | <i>Non- European officials</i> | <i>Police</i> |
|---|-------------------------------|-----|--|---------------|
| Total number on establishment | .. | 5 | 149 | 69 |
| Average number resident | .. | 5 | 149 | 69 |
| Total number on sick list | .. | 1 | 19 | 54 |
| Total number of days on sick list | .. | 3 | 186 | 71 |
| Percentage of sick to average number resident | .. | 20 | 12.75 | 78.26 |
| Average number of sick days on sick list for each patient | .. | 3 | 9.8 | 4.89 |
| Total number invalided | .. | Nil | 1 | 4 |
| Total number of deaths | .. | Nil | Nil | Nil |
| Percentage of invalided to average resident | .. | Nil | 7 | 5.8 |
| Percentage of deaths to average resident | .. | Nil | Nil | Nil |

III.—HYGIENE AND SANITATION

(a) GENERAL

42. The main Sanitary work is carried out in Brunei and Kuala Belait. Both towns have a Sanitary board, the Health Officer being a member of each.

Elsewhere, this programme is carried out by District Officers.

43. No funds were available for an extensive programme in 1932, and no great advance was made.

44. *Sewage disposal*.—In Brunei and Kuala Belait and to a lesser extent in Tutong—the bucket type of latrine is general. Subsequent disposal of sewage is into the sea or convenient tidal river. All Malay latrines are over a waterway. A few European Bungalows have a water carriage system.

45. *Disposal of Rubbish*.—This is affected in the Sanitary Board areas by the compulsory use of dust bins and subsequent incineration. Elsewhere, methods are more haphazard.

(b) PREVENTIVE MEASURES

(a) *Malaria*—

46. In Kuala Belait a regular anti-malarial campaign is carried out by the staff of the British Malayan Petroleum Co., Ltd. This does not indicate that it is more necessary in Kuala Belait than elsewhere in the State—this being a regular practice of this company.

47. In Brunei Town—the only anti-malarial measures carried out were the up-keep of existing drains and the filling in of holes, etc. where necessary.

48. An effort was made to start a classification of the existing Anophelene mosquitoes of the State. The following type have been identified from larval collections: A. Barbirostris, the commonest, A. Sinensis, A. Umbrosus and A. Kochi.

49. This work will be carried on and it is hoped that when more assistance is available accurate charts will be prepared.

50. An attempt was made to solve the anomaly of the excessive spleen rate of 85% found in the previous year along the Tutong road.

51. The explanation appears to be as follows:—

- (1) This spleen rate was taken of a relatively small number of children, about 50—and therefore may not be strictly accurate.
- (2) The subjects of the spleen rate were children requiring medical attention and therefore not a truly representative population.
- (3) These children are the off spring of people living in the territory adjoining this road and therefore this Index is not of the inhabitants of the road but of a vast territory—about 20 miles wide by 30 miles long.

52. A further spleen rate of people actually residing along this road was taken. The figure is 47.7, a much smaller over than the previous estimate.

53. It can be definitely stated that any form of control other than the regular administration of quinine, is out of the question. The territory is vast, the population very sparse and nomadic and the cost of any other measures would be prohibitive for the resultant gain.

(b) Epidemic diseases—

54. Vaccinations are carried out mainly by the Travelling dresser. The number of vaccinations is steadily increasing—the actual figures being 989 for 1931 and 1,160 for 1932.

55. It is hoped that when legislation for compulsory vaccination is provided—that these figures will be exceeded.

(c) Helminthic diseases—

56. Brunei is fortunate in the abundance of streams present. Consequently as all Malay latrines are over some such stream, the disposal of sewage is of the simplest and effective.

This may be seen from the low incidence of Ankylostomiasis.

57. The relatively high rate of Ascariasis can only be dealt with by instruction in matters of personal hygiene.

58. Simple lectures on this subject are given from time to time in the Schools.

(c) WATER-SUPPLY

59. Brunei Town has two excellent water supplies. Both are from local hill streams—led off by pipes.

One supply has a sand filter incorporated.

60. Elsewhere the supply is obtained from shallow wells and in some cases from an adjacent stream.

(d) SCHOOL HYGIENE

61. Each school in the State was visited by the Medical Officer once. Spleen rate and stool examinations amongst the scholars is done annually. The results are tabulated in Appendix IV. A new school was erected in Brunei for Malays.

(e) HOUSING AND TOWN PLANNING

62. This is entirely in the hands of the Sanitary Board and all plans of buildings within the areas under their control are submitted for inspection to the Medical Department before being passed.

(f) LABOUR CONDITIONS

63. There are five Rubber estates and one Cutch factory under European management and in Kuala Belait there is the British Malayan Petroleum Co., Ltd.

Besides the Government, these are the main employers of labour.

64. The estates were visited bi-annually by the Medical Officer. The cutch factory is within the limits of the Brunei Sanitary Board area.

The British Malayan Petroleum Co., Ltd., have their own Medical staff.

65. On estates where the labour force is resident the lines are of approved type. But progress is being made in that when old lines are demolished—the labourers are placed in separate detached dwellings—when space and funds permit.

With the present skeleton forces no trouble has been experienced to effect this.

66. The housing of the labour force of the British Malayan Petroleum Co., Ltd., is carried out by their own Sanitary staff—under the control of the Kuala Belait Sanitary Board.

67. No anti-malarial work has been carried out—beyond surface drainage where necessary. The incidence of malaria is low and under present economic conditions extensive programmes are impossible.

68. Schools and Temples are provided in each estate.

69. Every estate has one well stocked shop, the prices of commodities being controlled.

70. Seventeen Chinese and three of other races were repatriated during the year.

71. The following table gives the statistics of population—Sickness, births and deaths amongst the various labour forces.

| Place of employment | Labour | Total population | Sickness Rate | Birth rate per 1,000 | Death rate per 1,000 |
|--|--------|---------------------|---------------|----------------------|----------------------|
| British Malayan Petroleum Co., Ltd. | 699 | 961 | 4.2 | Nil | 14.5 |
| Brunei United Plantation, Ltd. ... | | Non-resident labour | | | |
| Gadong Estate | 214 | 214 | 9.2 | 9.3 | Nil |
| Batu Apoi and Biang Estates ... | 128 | 217 | 2.7 | 18.3 | 32.2 |
| Labu Estate | 107 | 319 | 11.1 | 119.1 | 65.8 |

(h) FOOD IN RELATION TO HEALTH AND DISEASE

72. The dietary of the Malay is fairly varied and a few cases of deficiency diseases are seen. There were six admissions for Beri Beri in the year.

73. The general population use local rice and this has been introduced into the diet of the hospital.

IV.—HOSPITALS AND DISPENSARIES

(a) GENERAL

74. No new buildings were erected during the year.

75. The Government maintains a General Hospital in Brunei and a Travelling Dispensary.

76. In the latter part of the year negotiations were completed with the British Malayan Petroleum Co., Ltd., Kuala Belait, for sharing in the cost of erection of a new and larger hospital there. This hospital will be completed in 1933.

77. The hospital equipment was increased slightly during the year, mainly an addition of surgical instruments.

(b) CASES TREATED

78. The total number of admissions into the hospital were 199 (compared with 189 in 1931).

Appendix V shows the list of diseases and results:

The chief diseases were—

| | | | | |
|------------------|----|----|----|----------|
| Malaria | .. | .. | .. | 22 cases |
| Ulcers (various) | .. | .. | .. | 10 „ |
| Yaws | .. | .. | .. | 7 „ |
| Beri Beri | .. | .. | .. | 6 „ |
| Cataracts | .. | .. | .. | 6 „ |

(c) OUT-DOOR DISPENSARY

79. This is attached to the Government Hospital and free treatment, medicinal and other is given—to all natives of the State. A record of this department is given in Appendix VI. The total number of patients treated was 5,535 with 16,210 attendances, an increase of 3,786 attendances over the 1931 figures. Amongst the 199 admissions 23 were females and children. This is a real advance especially as the majority of the female patients were voluntary. It is hoped that the optimism of providing a special ward for them in 1933 will be justified.

(d) TRAVELLING DISPENSARY

80. This is conducted by a senior dresser and all parts of the State were visited during the year.

The chief centres with numbers of visits are given in Appendix X.

In Appendix VII a detailed list of the various maladies seen and treated is given.

In 1932—the total number treated was 5,525 (compared with 6,959 in 1931).

(e) OPERATIONS

81. Eighteen operations were carried out under General anæsthesia, four under spinal, and 41 under local.

It has not been found very difficult to induce the local native to undergo surgical procedures where necessary.

This type of work is increasing and the rate of progress will vary with the zeal of each Officer-in-charge for this branch of work. Appendix *VIII* gives a list of Operations with results.

(f) ADDITIONAL

82.—(a) Each rubber estate has a small dispensary with an emergency ward attached.

There are dressers in charge on three.

(b) The cutch factory also possesses a small dispensary but as they are within $\frac{1}{2}$ mile of the Government hospital no dresser is kept.

(c) The British Malayan Petroleum Co. Ltd., have their own hospital and medical staff in Kuala Belait. This hospital is about the same size as the Government hospital, Brunei, but not so well equipped.

V.—MATERNITY AND CHILD WELFARE

83. There was no organized child welfare work as there was no staff for this branch of work.

84. Every effort was made to obtain a local woman for training in midwifery and child welfare but without response.

85. The local Bidans (native midwives) were then approached. It was suggested that some sort of scientific training could be given to these women and thus help in the cause. This also proved of no avail.

86. Finally it was decided to obtain a qualified woman from Singapore. As there was no provision in the budget for this extra officer, a start was made by inducing two women to commence training in the hospital.

87. They will serve as a nucleus staff for the child welfare centre in 1933.

88. The infant mortality rate has, however, decreased very appreciably. In view of the above, this must be considered a fortuitous circumstance.

89. There were 1,306 birth registered with 335 Infant deaths. This gives an Infant mortality rate of 256.5 per mille compared with 314.00 in 1931.

VI.—PRISONS AND ASYLUMS

(a) HEALTH OF PRISONERS

90. There were 35 prisoners under detention. The number treated totalled 24 with 135 attendances, mostly for minor complaints.

91. No epidemic disease occurred amongst the prisoners.

92. The Prison is situated in Brunei. It is visited monthly by a committee appointed by the Resident and their recommendations are carried out.

(b) LUNACY

93. There is no mental disease asylum in the State.

94. Cases of mental disease are kept under observation in a separate room in the Government hospital and transferred to Singapore after certification.

95. There was one certification in the year.

(c) LEPROSY

96. There is an isolation building in the grounds of the hospital which serves as a detention house for leprosy.

97. Provision has been made to start a colony for leper should numbers increase.

98. At present there are only two and the present system works efficiently.

VII.—GENERAL

(a) VISITORS

99. The Acting Adviser, Medical and Health Services, Malaya, Dr. R. D. FITZGERALD paid a visit to Brunei in August.

100. His recommendations for future expansion and improvements of the Medical Department have been carried out, partly in the programme for 1933 and the rest will be done in following years as financial conditions permit.

(b) METEOROLOGY

101. The records of rainfall and temperature are kept in the Government hospital.

102. Statistics will be found in Appendix *XII*.

103. There is very little variation in the temperature from month to month. Extremes are never experienced, and the monotony is rather trying.

104. The total rainfall was 153.48 inches, the wettest month being March with 17.73 and the driest June with 8.68 inches.

APPENDIX I

TOTAL STAFF OF THE MEDICAL DEPARTMENT DURING 1932

- (1) Medical Officer.
- (2) Hospital Dresser Grade I.
- (3) Travelling Dresser Grade II.
- (4) Dresser Grade III.
- (5) Overseer and Market Inspector.
- (6) Apprentice Dresser.
- (7) Dispensary Attendant.
- (8) Hospital Attendant.
- (9) Hospital cook.
- (10) Gardener.
- (11) Extra Gardener.
- (12) Conservancy coolie.
- (13) Conservancy coolie.
- (14) Conservancy coolie.
- (15) Conservancy coolie.
- (16) Apprentice Female Attendant.
- (17) Apprentice Female Attendant.
- (18) Sanitary Board Inspector (Kuala Belait).

APPENDIX II

REVENUE 1932

| | | | \$ | c. |
|---|----|----|-----|----|
| Sale of Medicines and Hospital charges .. | .. | .. | 913 | 13 |

EXPENDITURE 1932

| | | | | |
|---------------------------------------|----|----|--------|----|
| Personal Emoluments .. | .. | .. | 17,956 | 77 |
| Allowances Travelling and Personal .. | .. | .. | 937 | 40 |
| „ Motor car .. | .. | .. | | |
| „ Motor cycle .. | .. | .. | | |
| „ Bicycle .. | .. | .. | | |
| Medicines and Equipment .. | .. | .. | 2,481 | 91 |
| Patients Diets .. | .. | .. | 886 | 84 |
| Clothing and Laundry .. | .. | .. | 199 | 90 |
| Miscellaneous .. | .. | .. | 198 | 61 |
| Maintenance of Lunatics .. | .. | .. | 272 | 80 |
| Conservancy .. | .. | .. | 969 | 90 |

APPENDIX III

VITAL STATISTICS

TABLE I

Estimated population with Birth and Death Rates for 1932

| Population | | Births | | Deaths | | Birth-rate per mille | | Death-rate per mille | |
|------------|--------|--------|-------|--------|------|-------------------------|-------|-------------------------|-------|
| 1931 | 1932 | 1931 | 1932 | 1931 | 1932 | 1931 | 1932 | 1931 | 1932 |
| 30,162 | 30,595 | 1,147 | 1,306 | 947 | 873 | 38.03 | 42.69 | 31.40 | 28.54 |

TABLE II

Births registered according to Nationalities

| Malays | Chinese | Dayaks | Dusuns | Europeans | Eurasians | Indians | Javanese | Kedayans | Muruts | Tutongs | Others | Total |
|--------|---------|--------|--------|-----------|-----------|---------|----------|----------|--------|---------|--------|-------|
| 660 | 114 | 12 | 106 | 2 | 2 | 9 | 11 | 244 | 14 | 123 | 9 | 1,306 |

TABLE III

Deaths registered according to Nationalities

| Malays | Chinese | Dayaks | Dusuns | Europeans | Eurasians | Indians | Javanese | Kedayans | Muruts | Tutongs | Others | Total |
|--------|---------|--------|--------|-----------|-----------|---------|----------|----------|--------|---------|--------|-------|
| 421 | 70 | 4 | 59 | ... | 1 | 3 | 4 | 197 | 13 | 98 | 3 | 873 |

APPENDIX III—Continued

TABLE IV

Deaths grouped according to Age, Sex and Nationality

| Age groups | | | | Sex | Europeans | Eurasians | Chinese | Malays | Indians | Others | Total |
|------------|--------|----------|-----|------------|-----------|-----------|----------|----------|---------|----------|----------|
| 0 | ... | ... | ... | { M. F. | ... | ... | 8 5 | 26 23 | ... | 18 24 | 52 52 |
| 4 | Weeks | ... | ... | { M. F. | ... | ... | 4 4 | 34 20 | ... | 21 15 | 59 40 |
| 3 | Months | ... | ... | { M. F. | ... | 1 | 4 4 | 26 13 | ... | 13 10 | 44 27 |
| 6 | " | ... | ... | { M. F. | ... | ... | 3 3 | 23 12 | ... | 11 9 | 37 24 |
| 1 | Year | ... | ... | { M. F. | ... | ... | 2 4 | 24 15 | ... | 28 41 | 54 60 |
| 5 | Years | ... | ... | { M. F. | ... | ... | 2 ... | 8 9 | ... | 16 10 | 26 19 |
| 10 | " | ... | ... | { M. F. | ... | ... | ... | 4 7 | ... | 7 2 | 11 9 |
| 15 | " | ... | ... | { M. F. | ... | ... | ... | 4 7 | ... | 5 3 | 9 10 |
| 20 | " | ... | ... | { M. F. | ... | ... | 1 ... | 4 7 | ... | 1 3 | 6 10 |
| 25 | " | ... | ... | { M. F. | ... | ... | ... | 3 8 | 1 | 8 7 | 12 15 |
| 30 | " | ... | ... | { M. F. | ... | ... | 3 3 | 6 11 | ... | 8 12 | 17 26 |
| 35 | " | ... | ... | { M. F. | ... | ... | 7 2 | 9 7 | ... | 3 6 | 19 15 |
| 40 | " | ... | ... | { M. F. | ... | ... | 1 ... | 6 11 | ... | 13 11 | 20 22 |
| 45 | " | ... | ... | { M. F. | ... | ... | 3 1 | 4 4 | 1 | 4 5 | 12 10 |
| 50 | " | ... | ... | { M. F. | ... | ... | 2 ... | 7 10 | ... | 10 10 | 19 20 |
| 55 | " | and over | ... | { M. F. | ... | ... | 4 ... | 25 44 | ... | 21 23 | 50 67 |
| Total ... | | | | | ... | 1 | 70 | 421 | 3 | 378 | 873 |

APPENDIX III—*Concluded*

TABLE V

Infantile Mortality registered during each Month according to Sex, with Mortality Rate per thousand Births

| Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sep. | Oct. | Nov. | Dec. | Total | Total Birth | Rate per 1,000 birth |
|---|--|------|-------|-----|------|------|------|------|------|------|------|-------|-------------|----------------------|
| M. F. M. F. M. F. M. F. M. F. M. F. M. F. M. F. M. F. M. F. M. F. M. F. | 20 13 14 19 15 16 18 8 21 11 14 12 20 14 14 16 10 13 19 11 12 3 15 7 192 143 | | | | | | | | | | | | 1,306 | 256.5 |

TABLE VI

Deaths registered as regards certification

| | | | |
|---|----|----|------------|
| Certified by Medical Practitioners | .. | .. | 18 |
| Certified by Registering officers after death | .. | .. | 693 |
| Uncertified | .. | .. | 162 |
| | | | <u>873</u> |

APPENDIX IV

Table showing the results of Spleen and Stool Examination of School Children

| NAME OF SCHOOLS | No. of pupils examined | Spleen enlarged | Spleen rate | STOOLS | | | |
|----------------------|------------------------|-----------------|-------------|-------------|----------------|---------|----------------|
| | | | | Ankylostoma | Infection rate | Ascaris | Infection rate |
| Brunei | 339 | 9 | 2.65 | 58 | 17.1 | 179 | 52.8 |
| Gadong | 27 | 2 | 7.4 | 1 | 3.78 | 7 | 25.9 |
| Sengkurong | 14 | 4 | 28.57 | .. | ... | 10 | 71.4 |
| Muara | 59 | 18 | 30.5 | ... | ... | 48 | 81.36 |
| Labu | 13 | 1 | 7.69 | ... | ... | 13 | 100. |
| Tutong | 44 | ... | ... | ... | ... | 37 | 84.09 |
| Lubok Pulau | 18 | ... | ... | 1 | 5.55 | 15 | 83.33 |
| Tanjong Maya | 44 | ... | ... | ... | ... | 37 | 84.09 |
| Tumpuan Ugas | 30 | 1 | 3.3 | ... | ... | 22 | 73.33 |
| Kuala Belait (Malay) | 34 | 1 | 2.94 | ... | ... | 27 | 79.41 |
| Do. (Chinese) | 52 | 2 | 3.85 | ... | ... | 8 | 15.38 |
| Do. (English) | 31 | ... | ... | ... | ... | 11 | 35.48 |

APPENDIX V

*Return of Sick of the Government Hospital, Brunei
for the year 1932*

| Class | Specific Disease | Remained | Admitted | Total | Discharged | Transferred | Absconded | Died | Remaining | Remarks |
|---------------------------|----------------------------|----------|----------|-------|------------|-------------|-----------|------|-----------|---------|
| Infectious Disease ... | Malaria B. T. ... | ... | 3 | 3 | 3 | ... | ... | ... | ... | |
| „ ... | Malaria S. T. ... | ... | 3 | 3 | 3 | ... | ... | ... | ... | |
| „ ... | Malaria Quartan ... | ... | 4 | 4 | 4 | ... | ... | ... | ... | |
| „ ... | Malaria Unclassified ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Malarial Cachexia ... | ... | 10 | 10 | 9 | ... | ... | 1 | ... | |
| „ ... | Leprosy ... | 1 | 2 | 3 | 1 | ... | ... | .. | 2 | |
| „ ... | Black water fever ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Influenza ... | ... | 6 | 6 | 6 | ... | ... | ... | ... | |
| „ ... | Elephantiasis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| Tuberculosis ... | Pulmonary ... | ... | 8 | 8 | 7 | ... | ... | ... | 1 | |
| „ ... | Other ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| General Disease ... | Beri Beri ... | ... | 6 | 6 | 6 | ... | ... | ... | ... | |
| „ ... | Diabetes ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Rheumatism ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Bantis' disease ... | ... | 1 | 1 | 1 | ... | ... | .. | ... | |
| „ ... | Adenoma of Thyroid ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Pernicious Anæmia ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Secondary Anæmia ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| Circulatory System ... | Myocarditis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Phlebitis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| Respiratory System ... | Bronchitis ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Lobar-Pneumonia ... | ... | 3 | 3 | 3 | ... | ... | ... | ... | |
| „ ... | Broncho-Pneumonia ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Emphysema .. | ... | 1 | 1 | ... | ... | ... | ... | 1 | |
| Digestive System ... | Enteritis ... | ... | 5 | 5 | 5 | ... | ... | ... | ... | |
| „ ... | Gastric Carcinoma ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Amœbic Dysentery ... | ... | 2 | 2 | 2 | ... | .. | ... | ... | |
| „ ... | Bacillary Dysentery... | ... | 5 | 5 | 5 | ... | ... | ... | ... | |
| „ ... | Catarrhal Jaundice ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Cholecystitis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| Nervous System ... | Insanity ... | ... | 4 | 4 | 2 | 2 | ... | ... | ... | |
| „ ... | Epilepsy ... | ... | 4 | 4 | 4 | ... | .. | ... | ... | |
| „ ... | Myelitis ... | ... | 1 | 1 | ... | ... | ... | 1 | ... | |
| Genito-urinary System ... | Cystitis ... | ... | 1 | 1 | ... | ... | 1 | ... | ... | |
| „ ... | Pyelitis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Pyelonephritis ... | ... | 1 | 1 | 1 | ... | ... | ... | .. | |
| Venereal Disease ... | Gonorrhœa ... | ... | 3 | 3 | 3 | ... | ... | ... | ... | |
| „ ... | Gonorrheal Orchitis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| „ ... | Secondary Syphilis ... | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| Bones and Joints ... | Chronic Osteomyelitis ... | 1 | 1 | 2 | ... | ... | ... | 1 | 1 | |
| „ ... | Synovitis ... | ... | 2 | 2 | 2 | ... | ... | ... | ... | |
| „ ... | Chronic arthritis .. | ... | 1 | 1 | 1 | ... | ... | ... | ... | |
| | <i>Carried forward</i> ... | 2 | 101 | 103 | 92 | 2 | 1 | 3 | 5 | |

APPENDIX V—Continued

Return of Sick of the Government Hospital, Brunei,
for the year 1932—Continued

| Class | Specific Disease | Remained | Admitted | Total | Discharged | Transferred | Absconded | Died | Remaining | Remarks |
|------------------------------|--------------------------------|----------|----------|-------|------------|-------------|-----------|------|-----------|---------|
| | <i>Brought forward</i> ... | 2 | 101 | 103 | 92 | 2 | 1 | 3 | 5 | |
| Violence (all forms)... | Fracture Compound | 1 | .. | 1 | .. | .. | .. | 1 | .. | |
| „ | Fracture Simple | .. | 5 | 5 | 4 | .. | .. | .. | 1 | |
| „ | Self Amputation of tongue | 1 | .. | 1 | 1 | .. | .. | .. | .. | |
| „ | Wounds | 1 | 8 | 9 | 9 | .. | .. | .. | .. | |
| „ | Animal bite | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Short gun wound | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Sprain | .. | 4 | 4 | 4 | .. | .. | .. | .. | |
| Ear, Eye, nose and throat | Conjunctivitis | 1 | 1 | 2 | 2 | .. | .. | .. | .. | |
| „ | Cataract | .. | 6 | 6 | 6 | .. | .. | .. | .. | |
| „ | Corneal Ulcer | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Phylctenular Keratitis | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Bilateral Panophthal- mitis | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Perforating eye injury | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Chronic Rhinitis | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Tonsillitis | .. | 2 | 2 | 2 | .. | .. | .. | .. | |
| „ | Laryngitis | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| Helminthic Infection | Ankylostomiasis | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Ascariasis | .. | 3 | 3 | 2 | .. | .. | .. | 1 | |
| Skin & Cellular Tissue | Ulcer | .. | 10 | 10 | 9 | .. | .. | .. | 1 | |
| „ | Cellulitis leg | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Abscess | .. | 5 | 5 | 5 | .. | .. | .. | .. | |
| „ | Yaws | .. | 7 | 7 | 6 | .. | .. | .. | 1 | |
| „ | Bromide rash | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Tinea Imbricata | .. | 6 | 6 | 3 | .. | .. | .. | 3 | |
| „ | Eczema | .. | 2 | 2 | 2 | .. | .. | .. | .. | |
| „ | Vegetable rash | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| Undefined Disease | Inguinal Hernia | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| „ | Poisoning Cause unknown | .. | 4 | 4 | 4 | .. | .. | .. | .. | |
| „ | Observation | 1 | 5 | 6 | 4 | .. | .. | .. | 2 | |
| „ | Chronic Opium habit | .. | 2 | 2 | 2 | .. | .. | .. | .. | |
| „ | Pyrexia Unknown origin | .. | 5 | 5 | 5 | .. | .. | .. | .. | |
| „ | Malingering | .. | 1 | 1 | 1 | .. | .. | .. | .. | |
| Dental Disease | Pyorrhoeal abscess | .. | 2 | 2 | 2 | .. | .. | .. | .. | |
| | Total | 7 | 192 | 199 | 178 | 2 | 1 | 4 | 14 | |

APPENDIX VI

Annual return of the Out-door Dispensary for the year 1932

| <i>Diseases</i> | | <i>No. of cases</i> | |
|--------------------------------|----|---------------------|-------|
| Infectious Disease: | | | |
| (a) Malaria (all forms) | .. | .. | 252 |
| (b) Yaws | .. | .. | 74 |
| (c) Black water fever | .. | .. | 1 |
| (d) Tuberculosis— | | | |
| (1) Pulmonary | .. | .. | 28 |
| (2) Other | .. | .. | 1 |
| (e) Chicken-pox | .. | .. | 34 |
| (f) Dysentery— | | | |
| (1) Amœbic | .. | .. | 4 |
| (2) Bacillary | .. | .. | 27 |
| (g) Pneumonia (all forms) | .. | .. | 7 |
| (h) Whooping cough | .. | .. | 37 |
| Venereal Disease: | | | |
| (a) Gonorrhœa (all forms) | .. | .. | 19 |
| (b) Syphilis (all forms) | .. | .. | 1 |
| Helminthic Infection: | | | |
| (a) Ascariasis | .. | .. | 244 |
| Respiratory Disease: | .. | .. | 442 |
| Circulatory Disease: | | | |
| (a) Cardio-vascular | .. | .. | 2 |
| Gastro-Intestinal Disease: | | | |
| (a) Carcinoma | .. | .. | 3 |
| (b) Duodenal Ulcer | .. | .. | 4 |
| (c) Other | .. | .. | 715 |
| Genito-Urinary (Non-Venereal): | | .. | 47 |
| Diseases of Women: | | | |
| (a) Abortion | .. | .. | 3 |
| (b) Amenorrhœa | .. | .. | 1 |
| (c) Dysmenorrhœa | .. | .. | 7 |
| (d) Rape | .. | .. | 1 |
| Violence: | | | |
| All forms | .. | .. | 891 |
| Diseases of Skin, etc.: | .. | .. | 2,690 |
| Total | | .. | 5,535 |

APPENDIX VII

Annual return of the Travelling Dispensary for the year 1932

| <i>Diseases</i> | <i>No. of cases</i> |
|---------------------------------|---------------------|
| Infectious Disease: | |
| (a) Malaria (all forms) | 649 |
| (b) Yaws | 24 |
| (c) Chicken-pox | 22 |
| (d) Dysentery | 3 |
| (e) Whooping Cough | 136 |
| (f) Tuberculosis— | |
| (1) Pulmonary | 13 |
| Helminthic Infection: | |
| (a) Ascariasis | 1,513 |
| Respiratory Disease: | |
| (a) Bronchitis | 308 |
| Gastro-Intestinal Disease: | |
| (a) Dyspepsia, etc. | 511 |
| Genito-Urinary (Non-Venereal) : | 13 |
| Diseases of Women: | |
| (a) Abortion | 1 |
| (b) Dysmenorrhœa | 11 |
| Violence: | |
| (a) All forms | 315 |
| Diseases of Skin, etc.: | 2,006 |
| | <hr/> |
| | 5,525 |

APPENDIX VIII

Return of Operations performed during 1932

| Operations | | | | Number | RESULT | | Died |
|------------------------------|-----|-----|----|--------|--------|----------|------|
| | | | | | Cured | Relieved | |
| A.—General | | | | | | | |
| Partial Thyroidectomy | ... | ... | 1 | 1 | ... | ... | |
| Resection of Cervical glands | ... | ... | 1 | 1 | ... | ... | |
| Herniotomy | ... | ... | 1 | 1 | ... | ... | |
| Amputation of thigh | ... | ... | 1 | ... | ... | 1 | |
| For Hydrocele | ... | ... | 1 | ... | 1 | ... | |
| Orchidectomy | ... | ... | 1 | 1 | ... | ... | |
| Curettage of Uterus | ... | ... | 1 | 1 | ... | ... | |
| For Hæmorrhoids | ... | ... | 2 | 2 | ... | ... | |
| Manipulations of Fractures | ... | ... | 3 | 3 | ... | ... | |
| Sequestrectomy | ... | ... | 1 | 1 | ... | ... | |
| Incision for suppuration | ... | ... | 15 | 14 | ... | 1 | |
| Removal of foreign bodies | ... | ... | 7 | 7 | ... | ... | |
| Removal of Cysts, etc. | ... | ... | 15 | 15 | ... | ... | |
| Suture of Wounds | ... | ... | 24 | 24 | ... | ... | |
| Shot gun wound | ... | ... | 1 | ... | ... | 1 | |
| B.—Special | | | | | | | |
| (1) Eye— | | | | | | | |
| Removal of Foreign bodies | ... | ... | 3 | 3 | ... | ... | |
| For Pterygium | ... | ... | 1 | 1 | ... | ... | |
| Extraction of Cataract | | | 7 | 7 | ... | ... | |
| (2) Ear, Nose and Throat— | | | | | | | |
| Tonsillectomy | ... | ... | 1 | 1 | ... | ... | |
| Turbinectomy | ... | ... | 1 | 1 | ... | ... | |
| (3) Dental— | | | | | | | |
| Extractions, etc. | ... | ... | 6 | 6 | ... | ... | |
| | | | | 94 | 90 | 1 | 3 |

APPENDIX IX

LABORATORY RETURN 1932

(1) Blood:

A. Films—

(1) Malaria:

| | | | |
|--------------------|----|----|-----|
| (a) Benign Tertian | .. | .. | 13 |
| (b) Quartan | .. | .. | 10 |
| (c) Sub-Tertian | .. | .. | 3 |
| (d) Mixed | .. | .. | — |
| (e) Negative | .. | .. | 345 |

Total blood films examined .. 371

(2) Filaria:

| | | | |
|--------------|----|----|---|
| (a) Present | .. | .. | — |
| (b) Negative | .. | .. | 6 |

Total blood films examined 6

B. Blood Counts—

| | | |
|----------------------------|----|----|
| (a) Number of examinations | .. | 18 |
|----------------------------|----|----|

Total blood count examined .. 18

(2) Stools:

(b)

| | | |
|---------------------------------|----|-----|
| (1) Entæmoba Hystolytica | .. | 6 |
| (2) Entæmoba Coli | .. | — |
| (3) Syssts Entæmoba Hystolitica | .. | 1 |
| (4) Ankylostoma | .. | 34 |
| (5) Ascaris | .. | 485 |
| (6) Mixed (4 & 5) | .. | 30 |
| (7) Strongyloides | .. | 10 |
| (8) T. Trichiura | .. | 90 |
| (9) Blood and pus | .. | 35 |
| (10) Negative | .. | 347 |

Total of stools examined .. 1,038

(3) Sputum:

| | | |
|--------------------------|----|----|
| (a) Tuberculosis Bacilli | .. | 9 |
| (b) Negative | .. | 37 |

Total sputum examined .. 46

APPENDIX IX—*Continued*LABORATORY RETURN 1932—*Continued*

(4) Urine:

| | |
|-----------------------------|------------|
| (a) Pus and Organisms | 36 |
| (b) Casts (all forms) | 37 |
| (c) Negative | 201 |
| Total urine examined .. | <u>274</u> |

(5) Bacteriological examination of smears:

| | |
|-----------------------------------|-----------|
| (a) Gonococci | 13 |
| (b) Lepræ bacilli | 1 |
| (c) Other bacteria | 6 |
| (d) Negative | 17 |
| (e) Negative for Lepræ bacilli .. | 5 |
| Total smears examined .. | <u>42</u> |

APPENDIX X

Number of Attendances and Visits to each Centre for the year 1932

| NAMES OF CENTRES | | | Visits | Attendances |
|-----------------------------|--|--|--------|-------------|
| Brunei River villages | | | 43 | 1,236 |
| Kelanas | | | 81 | 548 |
| Sengkurong | | | 131 | 559 |
| Tutong District | | | 103 | 1,192 |
| Ulu Tutong | | | 18 | 563 |
| Kuala Belait District | | | 10 | 269 |
| Temburong | | | 8 | 142 |
| Muara | | | 17 | 466 |
| Labu | | | 3 | 29 |
| Limau Manis | | | 9 | 270 |
| Barakas | | | 12 | 251 |
| Total .. | | | 435 | 5,525 |

APPENDIX XI

Spleen rate along Tutong Road 1932

| CENTRES | No. Examined | Enlarged spleen | Spleen rate , |
|--------------------|--------------|-----------------|---------------|
| Telanai | 12 | 8 | 66.6 |
| Kelanas | 18 | 5 | 27.7 |
| Sengkurong | 17 | 8 | 47.06 |
| Bukit Kranji | 18 | 10 | 55.5 |

APPENDIX XII

Return of Rainfall and Temperature (in shade) for the year 1932

| Month | TEMPERATURE | | Rainfall |
|-----------------|-------------|----------|---------------|
| | Maximum | Minimum | |
| January | 85.71 F | 76.42 F | 10.35 Inches |
| February | 86.21 „ | 76.48 „ | 9.62 „ |
| March | 85.52 „ | 76.61 „ | 17.73 „ |
| April | 86.33 „ | 76.37 „ | 8.54 „ |
| May | 85.87 „ | 76.45 „ | 15.57 „ |
| June | 86.43 „ | 76.57 „ | 8.68 „ |
| July | 86.29 „ | 76.26 „ | 13.38 „ |
| August | 86.13 „ | 76.29 „ | 13.44 „ |
| September | 86.27 „ | 77.10 „ | 13.92 „ |
| October | 86.39 „ | 76.42 „ | 10.97 „ |
| November | 86.20 „ | 73.00 „ | 15.29 „ |
| December | 85.48 „ | 75.71 „ | 15.99 „ |
| Total | 1.032.83 F | 913.68 F | 153.48 Inches |
| Mean | 86.07 „ | 76.14 „ | .. |

SKETCH MAP OF THE STATE OF BRUNEI

Scale 12 Miles to 1 Inch

Miles 12 6 0 12 24 Miles

REFERENCE

- | | |
|--|--|
| Metalled Road | European Rubber Estates |
| Earth " | European Rubber Estates (area under Rubber) |
| Road Along Sand Beach | Native Holdings (Miscellaneous Cultivation) |
| State Boundary (assumed) | Oil Mining Lease (Brit. Mal. Pet. Co. Ltd.) |
| District Boundary | Oil Prospecting Licence (Brit. Mal. Pet. Co. Ltd.) |
| District Name | Police |
| Residency | Wireless Stations |
| Govt. Offices, Palace of H.H. the Sultan | Customs |
| Golf Course, Village Schools | |

